about above 1 access 1 accessible 2 accessing 1 accompanyi ng account 1 account s 1 activated 1 additional 1 additionally address 1 advantage 4 afield 1 against 1 allow 1 al ong alternative 1 american 1 amount any 2 appar at us 2 appliances 1 application 1 applications 4 apprehension 2 arrangement aspect 2 assi gned 1 attained 1 authenticate 1 authenticated 3 aut hent i cat i ng authentication 8 available 1 back 1 background 1 based 1 become 1 becomes 2 behalf 1 bot h 1 button 2 buyer 4 buyers 2 buyi ng can 6 card 13 cards 6 carried 1 carry 2 carrying 1 cel l'ul ar certain 1 chosen 1 claims 1 codes 2 combination 1 combi nat i ons commerce 5 commer ci al common 1 comput at i onal

computer 1 comput er s concer ned 1 conducting 2 confidence 1 configuration conjunction 1 connection 4 considerable 1 construction 1 cont empl at ed 1 conveni ence 1 created 2 credit 16 cross 2 data 1 dat abase 5 dealing 1 debit 4 deliver 2 description desirable device 5 devi ces diagram 4 difficult 1 difficulties directed 1 di scover 1 di spensed 4 dispensing 2 drawings 2 eliminated 1 eliminating employed 2 emulate 1 enable 1 enabl ed 1 encryption 2 ener gy 3 equation 1 equations essentially 1 et c 2 even 2 example 1 exchange 1 exhausted 2 exists 1 exposure 1 express 1 ext er nal face 8 f i nanci al finds 1 flow 4 form 3 2 forms forth 1 1 fraud fraudul ent front 2 fuel ed 1

fully 1 general 1 generated 4 generating 2 gover nment handhel d 2 hei ght her ei naft er 2 hol der s 1 identification illustrated illustrates 3 implementation 1 important 1 include 2 includes 2 including 2 incorporating 1 increase 3 increased 1 information 4 inoperable 2 institutions integrity 1 intended 2 int er act ing 1 int er est i nt er nal 10 int er net known 1 less like 2 loaded 3 magnetic 3 maintaining manufacture 2 mastercard 1 may 3 medi cal 1 memor y met hod 11 met hods 1 mi ni mi zed more 5 multiple 2 need 2 needs 1 network 6 new 1 number 19 numbers 18 numer ous 1 objects 1 once 2 one 2 online 1 optionally 2 order 3 original otherwise 4 out 4 over 5 over comes

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over head 2
particular 2
parts
       1
per sonal
           2
phone 1 phones 1
pin 2
point ed 1
pol ynom al
portable 2
powered 1
powerful 1
pre 2
present s
pressing 2
prevent 1
problems 1
product s
programmed 2
programming
provision 1
purposes 1
pur poses
random 22
realized 1 records 1
reduced 1
reducing 1
referenced 2
referred 1
registration 1
reĭates 1
reliable 1
relieves 1
reports 1
reputation 1
requirement 1
requirements 1
requiring
r esul t ant
resulting 1
rtm 4
saf eguar di ng 1
sales 1
savings 1
scanner 2
secret 1
security 2
seller 1
sellers 3
selling 1
sensitive 1
serves 1
services 1
session 2
set 1
sets 3
shopping 1
showing 3
side 3
signaling 2
significant
similar 1
simple 2
```

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simplified 1
single 1
sizē 1
smaller 1
software 1
solar 1
sources 1
sparked 1
specifically
standard 2
steps 1
still 1
storage 2
strip 2
submitted 1
summary 1
synchronizing 1
system 6
systems 5
take 1
takes 1
t hi ckness
time 3
token 28
total 2
traditional 4
transaction 8
transactional 2
transactions 6
transducers 1
transform 1
transformations 2
t ype
typically 2
unauthorized 2
uncertainty 1
uni que 3
used 3
user 11
usi ng 3
variety 1
visa 1
voting 1
way 2
whom 1
widely 1
width 1
without 1
world 1
yet 1
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